



Eng. David Roldan, PE

PO Box 3547 • Aguadilla, PR 00605 • Phone: 787-408-5609 •
E-Mail: david.roldan@gmail.com

Date: September 25, 2014

Mr. Maximo Torres

President

Maximo Solar

Carr. 2 km 123.0

Caimital Alto

Aguadilla, PR 00603

Dear Mr. Maximo Torres:

I, Eng. David Roldan, PE, hereby certify that I have analyzed the frame structure designed by your company, Maximo Solar Industries. Also, I certify that the structure described below complies with the ASCE-7 2005 and the basic load combinations of the UBC and IBC codes. I certify that the structure can support winds loads with basic wind speed of 145 mph and seismic loads.

The analysis focused on the worst case scenario for structure model for 72 cells PV panels at 15 degrees due south. The structure is also manufactured for 60 cells PV panels. The structure has two horizontal beams with length of 121 inches for the front, and rear rails. Both are constructed of cold-formed structural aluminum, with a shape type of a "C" channel with lips. The rails depth is of 3.876 inches, with width of 1.5 inches and thickness of .125 inches. Also, one side bar on each side of structural aluminum with a "C" channel shape no lips and dimensions of 3.0 inches of web depth, 0.5 inches width, and a thickness of .125 inches interconnects the structures from the rear horizontal rail to the front horizontal rail. Each side bar rail length is of 52.736 inches. The assembled structure with the solar panels creates an inclination of 15 degrees due north south. The height analyzed was for 20 ft. The structure is assembled with stainless steel ss-304 bolts of 3/8" in diameter.

The "C" channel beams are supported by three front column "c" channel type with dimensions of three inches of web length, one inch for the flange and a height of 9.163 inches. The three rear columns are "c" channel type with dimensions of three inches of web length, one inch for the flange and a height of 22.553 inches.

Also, the structure is assumed to be secured to a ceiling with an $f'_c = 4,000$ psi fixed to the floor using Hilti KVB anchoring expansion bolts. The anchored bolts are of 1/2 inch in diameter.

Respectfully,

Eng. David Roldan, PE
Professional Engineer

